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WHAT IS CLAIMED IS:

1	1. An isolated nucleic acid encoding a G-protein coupled receptor
2	polypeptide, the nucleic acid encoding a polypeptide comprising greater than 70% amino
3	acid identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8,
4	SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.

- 2. An isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide comprising greater than 80% amino acid identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 3. An isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide comprising greater than 90% amino acid identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 4. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide that specifically binds to polyclonal antibodies generated against an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 5. The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide that has G-protein coupled receptor activity.
- 1 6. The isolated nucleic acid of claim 1, wherein the nucleic acid 2 encodes a polypeptide comprising an amino acid sequence of SEQ ID NO:6, SEQ ID 3 NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 7. The isolated nucleic acid of claim 1, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO:5, SEQ ID NO:3, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.
- 1 8. The isolated nucleic acid of claim 1, wherein the nucleic acid is 2 amplified by primers that specifically hybridize under stringent hybridization conditions 3 to a nucleic acid having a nucleotide sequence of SEQ ID NO:5, SEQ ID NO:3, SEQ ID 4 NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.

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1	9. An isolated nucleic acid encoding a G-protein coupled receptor
2	polypeptide, wherein the nucleic acid specifically hybridizes under stringent hybridization
3	conditions to a nucleic acid having a nucleotide sequence of SEQ ID NO:5, SEQ ID
4	NO:3, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.

- 10. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about 70% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16, wherein the nucleic acid selectively hybridizes under moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:5, SEQ ID NO:3, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, or SEQ ID NO:15.
- 11. An isolated nucleic acid encoding a G-protein coupled receptor polypeptide, wherein the nucleic acid encodes a polypeptide comprising at least 25 contiguous amino acids of the amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 12. The isolated nucleic acid of claim 11, wherein the nucliec acid encodes a polypeptide that comprises at least 50 contiguous amino acids of the amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 13. An isolated nucleic acid encoding a G-protein coupled receptor 2 polypeptide, wherein the nucleic acid encodes a polypeptide comprising greater than 90% 3 amino acid identity to an amino acid sequence of SEQ ID NO:2 or SEQ ID NO:14.
- 1 14. The isolated nucleic acid of claim 13, wherein the nucleic acid 2 encodes a polypeptide that specifically binds to polyclonal antibodies generated against 3 an amino acid sequence of SEQ ID NO:2 or SEQ ID NO:14.
- 1 15. The isolated nucleic acid of claim 13, wherein the nucleic acid encodes a polypeptide that has G-protein coupled receptor activity.

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1	16.	The isolated nucleic acid of claim 13, wherein the nucleic acid
2	encodes a polypeptide	comprising an amino acid sequence of SEQ ID NO:2 or SEQ ID
3	NO:14.	

- 1 The isolated nucleic acid of claim 13, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO:1 or SEQ ID NO:13.
- 1 18. An isolated nucleic acid encoding a G-protein coupled receptor 2 polypeptide, the polypeptide encoded by the nucleic acid comprising greater than about 3 90% amino acid identity to a polypeptide having an amino acid sequence of SEQ ID 4 NO:2 or SEQ ID NO:14, wherein the nucleic acid selectively hybridizes under
- 5 moderately stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:1
- 6 or SEQ ID NO:13.
- 1 19. An isolated G-protein coupled receptor polypeptide, the 2 polypeptide comprising greater than about 70% amino acid sequence identity to an amino 3 acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID 4 NO:12, or SEQ ID NO:16.
 - 20. The isolated polypeptide of claim 19, wherein the polypeptide comprises greater than 80% amino acid sequence identity to an amino acid sequence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 21. The isolated polypeptide of claim 19, wherein the polypeptide 2 comprises greater than 90% amino acid sequence identity to an amino acid sequence of 3 SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID 4 NO:16.
- 1 22. The isolated polypeptide of claim 19, wherein the polypeptide 2 specifically binds to polyclonal antibodies generated against SEQ ID NO:6, SEQ ID 3 NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16.
- 1 23. The isolated polypeptide of claim 19, wherein the polypeptide has 2 G-protein coupled receptor activity.

1		24.	The isolated polypeptide of claim 19, wherein the polypeptide has
2	the amino aci	d seque	ence of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10
3	SEQ ID NO:12, or SEQ ID NO:16.		
1		25.	An isolated G-protein coupled receptor polypeptide, the
2	polypeptide c	ompris	ing greater than about 90% amino acid sequence identity to an amino
3	acid sequence	of SE	Q ID NO:2 or SEQ ID NO:14.
1		26.	The isolated polypeptide of claim 25, wherein the polypeptide
2	specifically b	inds to	polyclonal antibodies generated against SEQ ID NO:2 or SEQ ID
3	NO:14.		
1		27.	The isolated polypeptide of claim 25, wherein the polypeptide has
2	G-protein coupled receptor activity.		
1		28.	The isolated polypeptide of claim 25, wherein the polypeptide has
2	an amino acid	d seque	nce of SEQ ID NO:2 or SEQ ID NO:14.
1		29.	An antibody that selectively binds to the polypeptide of claim 19,
2	or 25.		
1		30.	An expression vector comprising the nucleic acid of claim 1, 11, o
2	13.		
1		31.	A host cell transfected with the vector of claim 30.
1		32.	A method for identifying a compound that modulates signal
2	transduction, the method comprising:		
3		(i) co	ontacting the compound with a polypeptide comprising greater than
4	70% amino acid sequence identity to the amino acid sequence of SEQ ID NO:6, SEQ II		
5	NO:4, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, or SEQ ID NO:16; and		
6		(ii) d	etermining the functional effect of the compound upon the
7	polypeptide.		
1		33.	The method of claim 32, wherein the polypeptide has G-protein
2	coupled recep	ptor act	tivity.

1 2	solid phase.	34.	The method of claim 32, wherein the polypeptide is linked to a
1	·	35.	The method of claim 34, wherein the polypeptide is covalently
2	linked to a so	lid phas	se.
1		36.	The method of claim 32, wherein the functional effect is
2	determined b	y meası	uring changes in intracellular cAMP, IP3, or Ca ²⁺ .
1	- CC 4	37.	The method of claim 32, wherein the functional effect is a chemical
2	effect.		
1	CC	38.	The method of claim 32, wherein the functional effect is a physical
2	effect.		
1		39.	The method of claim 32, wherein the functional effect is
2	determined b	y measi	uring binding of the compound to the polypeptide.
1		40.	The method of claim 32, wherein the polypeptide is recombinant.
1		41.	The method of claim 32, wherein the polypeptide comprises the
2	amino acid s	equence	e of SEQ ID NO:6, SEQ ID NO:4, SEQ ID NO:8, SEQ ID NO:10,
3	SEQ ID NO:	12, or S	SEQ ID NO:16.
1		42.	The method of claim 32, wherein the polypeptide is expressed in a
2	cell or cell m	embran	e.
1		43.	The method of claim 42, wherein the cell is a eukaryotic cell.
. 1		44.	The method of claim 43, wherein the cell is an adipocyte.
1		45.	The method of claim 43, wherein the cell is a spleen cell.
1		46.	The method of claim 43, wherein the cell is a colon cell.
1		47.	The method of claim 43, wherein the cell is a neuron.
1		48.	A method for identifying a compound that modulates signal
2	transduction	, the me	ethod comprising the steps of:

3	(i) contacting the compound with a polypeptide comprising greater than		
4	90% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2 or SEQ		
5	ID NO:14; and		
6	(ii) determining the functional effect of the compound upon the		
7	polypeptide.		
1		49.	The method of claim 48, wherein the polypeptide has G-protein
1	accompled recor		- · · · · · · · · · · · · · · · · · · ·
2	coupled recep	ioi activ	vity.
1		50.	The method of claim 48, wherein the polypeptide is linked to a
2	solid phase.		
		<i>c</i> 1	The west of a faire 48 ask again the functional effect is
1	1	51.	The method of claim 48, wherein the functional effect is
2	determined by	y measu	ring changes in intracellular cAMP, IP3, or Ca ²⁺ .
1		52.	The method of claim 48, wherein the functional effect is a chemical
2	effect.		
1		53.	The method of claim 48, wherein the functional effect is a physical
2	effect.		
1		54.	The method of claim 48, wherein the functional effect is
2	determined by		ring binding of the compound to the polypeptide.
	•	•	
1		55.	The method of claim 48, wherein the polypeptide is recombinant.
1		56.	The method of claim 48, wherein the polypeptide comprises the
2	amino acid se		of SEQ ID NO:2 or SEQ ID NO:14.
2	ammo acia se	quenec	01 52 2 12 110.2 01 52 2 12 110.1 1.
1		57.	The method of claim 48, wherein the polypeptide is expressed in a
2	cell or cell me	embran	e.
1		50	The method of claim 57, wherein the cell is a eukaryotic cell.
1		58.	The method of claim 37, wherein the cen is a cakaryotte cen.
1		59.	The method of claim 58, wherein the cell is a kidney cell.
		60	A most of a Commission bidgers disposed the method commission the
1		60.	A method of treating kidney disease, the method comprising the
2	step of administering to a patient a therapeutically effective amount of a compound		
3	identified usi	ng the r	nethod of claim 48.

1	61.	A method of treating cerebral cavernous malformations, the	
2	method comprising th	ne step of administering to a patient a therapeutically effective	
3	amount of a compour	nd identified using the method of claim 48.	
1	62.	A method of treating hyperlipidemia, the method comprising the	
2	step of administering	to a patient a therapeutically effective amount of a compound	
3	identified using the n	nethod of claim 32.	
1	63.	A method of treating obesity, the method comprising the step of	
2	administering to a pa	tient a therapeutically effective amount of a compound identified	
3	using the method of o	elaim 32.	
1	64.	A method of treating dyslexia, the method comprising the step of	
2	administering to a pa	tient a therapeutically effective amount of a compound identified	
3	using the method of	claim 32.	
1	65.	A method of treating cardiac myxoma, the method comprising the	
2	step of administering	to a patient a therapeutically effective amount of a compound	
3	identified using the r	nethod of claim 32.	
1	66.	A method of detecting the presence of an TGR-GPCR or a EDG-	
2	GPCR nucleic acid of	or polypeptide in human tissue, the method comprising the steps of:	
3		(i) isolating a biological sample;	
4		(ii) contacting the biological sample with a TGR-GPCR-specific	
5	reagent or a EDG-G	PCR-specific reagent that selectively associates with an TRG-GPCR	
6	nucleic acid or polypeptide or a EDG-GPCR nucleic acid or polypeptide; and,		
7		(iii) detecting the level of TGR-GPCR-specific reagent or EDG-	
8	GPCR-specific reage	ent that selectively associates with the sample.	
1	67.	The method of claim 66, wherein the TGR-GPCR-specific reagent	
2	or EDG-GPCR-spec	ific reagent is selected from the group consisting of: antibodies,	
3	oligonucleotide primers, and nucleic acid probes.		